An Implementation of a Turbo Decoder

Warm Shaw Yuan

ABSTRACT OF THE DISCLOSURE

5   A method for computing the function $\log(e^{x_1} + e^{x_2})$ or $\ln(e^{x_1} + e^{x_2})$ for a first argument value x_1 and a second argument value x_2 includes generating a table having a first data field and a second data field. The first data field includes N entries of table index values selected from a range of $|x_1\text{-}x_2|$ argument values and scaled by a scaling factor. The second data field includes N entries of computed

10   table values computed based on the equation $\log(1 + e^{-|x_1-x_2|})$ or $\ln(1 + e^{-|x_1-x_2|})$ for each of the $|x_1\text{-}x_2|$ argument values selected for the table index values. The computed table values are also scaled by the same scaling factor.